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CENTER for BIOLOGICAL DIVERSITY *Because life is good.*

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Working to protect and restore Western Watersheds and Wildlife

June 30, 2017

Sheri Wysong
Fluid Mineral Leasing Coordinator
Utah State Office
Bureau of Land Management
440 West 200 South, Suite 500
Salt Lake City, UT 84101

Via Facsimile: (801) 539-4237

RE: Western Watersheds et al. Protest of the September 2017 Competitive Oil and Gas Lease Sale, West Desert District - DOI-BLM-UT-W020-2017-0001-EA

Dear Ms. Wysong:

Western Watersheds Project, the Center for Biological Diversity, and American Bird Conservancy (collectively, "Protestors") hereby file this Protest of the Bureau of Land Management's ("BLM") planned September 2017 Competitive Oil and Gas Lease Sale and Environmental Assessment ("EA"), DOI-BLM-NV- DOI-BLM-UT-W020-2017-0001-EA, pursuant to 43 C.F.R. § 3120.1-3. We formally protest the inclusion of each of the nine parcels, covering approximately 14,943 acres in the West Desert District Office. The "specific serial numbers" of the parcels protested are:

Parcel Number	Designation in EA
UTU92485	UT0817-001
UTU92486	UT0817-002
UTU92487	UT0817-003
UTU92488	UT0817-004
UTU92489	UT0817-005
UTU92490	UT0817-006
UTU92491	UT0817-007
UTU92492	UT0817-008
UTU92493	UT0817-009

I. Protesting Parties and Contact Information

This Protest is filed on behalf of Protestors by their authorized representatives:

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II. Interests of the Protesting Parties

American Bird Conservancy (ABC) is a 501(c)(3) non-profit organization whose mission is to conserve native birds and their habitats throughout the Americas. It achieves this by safeguarding the rarest bird species, restoring habitats, and reducing threats to bird species. ABC has more than 8,000 individual members and 30,000 constituents. ABC's members, supporters, and activists enjoy viewing, studying, and photographing migratory and resident birds.

The Center for Biological Diversity is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center also works to reduce greenhouse gas emissions to protect biological diversity, our environment, and public health. The Center has over 1.3 million members and on-line activists, including those living in Utah who have visited public lands in the Fillmore for recreational, scientific, educational, and other pursuits and intend to continue to do so in the future, and are particularly interested in protecting the many native, imperiled, and sensitive species and their habitats that may be affected by the proposed oil and gas leasing. The Center has worked for years to advocate for conservation of greater sage-grouse habitat on public land.

Western Watersheds Project is a non-profit organization with more than 5,000 members and supporters. Our mission is to protect and restore western watersheds and wildlife through education, public policy initiatives and legal advocacy. Western Watersheds Project and its staff and members use and enjoy the public lands and their wildlife, cultural and natural resources for health, recreational, scientific, spiritual, educational, aesthetic, and other purposes. Western Watersheds Project also has a direct interest in mineral development that occurs in areas with sensitive wildlife populations and important wildlife habitat.

III. Statement of Reasons

BLM's Environmental Assessment ("EA") and proposed decision to lease nine the parcels listed above are substantively and procedurally flawed for numerous reasons, detailed below. We hereby incorporate by reference hereto our comments on the draft EA for the planned September 2017 sale, including all documents referenced therein. The principal flaws in BLM's analysis and proposed action are as follows:

1. BLM's EA violates the National Environmental Policy Act ("NEPA") by failing to take a hard look at the foreseeable site-specific impacts of its action on sensitive species and other species of concern, including the critically-imperiled Sheeprocks population of greater sage-grouse.

2. BLM's EA violates NEPA by failing to take into account substantial and relevant new information, post-dating its 2015 Environmental Impact Statement for the Utah Greater Sage-Grouse Draft Land Use Plan Amendment and Environmental Impact Statement, regarding the critical state of the Sheeprocks greater sage-grouse population and ongoing efforts to restore habitat and supplement the population.

3. Given foreseeable indirect impacts to a critically imperiled population of greater sage-grouse, the environmental impact of the proposed action is significant, and NEPA requires that BLM prepare an Environmental Impact Statement.

4. BLM's proposed lease sale would violate the Federal Land Policy and Management Act's requirement that implementation actions be consistent with the governing Resource Management Plan. Leasing of greater sage-grouse habitat within, adjacent, and proximate to designated priority habitat for a critically-imperiled greater sage-grouse population is inconsistent with the Record of Decision and Approved Resource Plan Amendments for the Great Basin Region (Great Basin ROD)and the Utah Greater Sage-Grouse Approved Resource Plan Amendment (UT ARMPA).

5. BLM's failure to ensure its actions will not lead to extirpation of the Sheeprocks greater sage-grouse population or impair recovery and restoration efforts violates the agency's Sensitive Species Policy.

6. BLM has failed to consider the climate and greenhouse gas emission impacts of its oil and gas leasing decisions

A. BLM's EA Violates the NEPA By Failing to Take a Hard Look at Foreseeable Indirect and Cumulative Impacts of the Proposed Action

The National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 *et seq.*, and its implementing regulations, promulgated by the Council on Environmental Quality ("CEQ"), 40 C.F.R. §§ 1500.1 *et seq.*, is our "basic national charter for the protection of the environment" achieving its purpose through "action forcing procedures. . . requir[ing] that agencies take a hard look at environmental consequences." 40 C.F.R. § 1500.1; *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (citations omitted). This includes the consideration of best

available information and data, as well as disclosure of any inconsistencies with federal policies and plans.

Recognizing that "each person should enjoy a healthful environment," NEPA ensures that the federal government uses all practicable means to "assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings," and to "attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences," among other policies. 43 U.S.C. § 4331(b).

NEPA regulations explain, in 40 C.F.R. §1500.1(c), that:

> Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork – even excellent paperwork – but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.

Thus, while "NEPA itself does not mandate particular results, but simply prescribes the necessary process," *Robertson v*, 490 U.S. at 350, agency adherence to NEPA's action-forcing statutory and regulatory mandates helps federal agencies ensure that they are adhering to NEPA's noble purpose and policies. *See* 42 U.S.C. §§ 4321, 4331.

NEPA requires agencies to undertake thorough, site-specific environmental analysis at the earliest possible time and prior to any "irretrievable commitment of resources" so that the action can be shaped to account for environmental values. *Pennaco Energy, Inc. v. U. S. DOI*, 377 F.3d 1147, 1160 (10th Cir. 2004). Oil and gas leasing is an irretrievable commitment of resources. *S. Utah Wilderness All. v. Norton*, 457 F. Supp. 2d 1253, 1256 (D. Utah 2006). Thus, NEPA establishes "action-forcing" procedures that require agencies to take a "hard look," at "all foreseeable impacts of leasing" before leasing can proceed. *Center for Biological Diversity v. United States DOI*, 623 F.3d 633, 642 (9th Cir. 2010); *N.M. ex rel. Richardson v. BLM*, 565 F.3d 683, 717 (10th Cir. 2009).

NEPA also imposes "action forcing procedures ... requir[ing] that agencies take a *hard look* at environmental consequences." *Methow Valley*, 490 U.S. at 350 (citations omitted) (emphasis added). As discussed in greater detail below, the Final Environmental Assessment ("EA") failed to take a hard look at several foreseeable and significant environmental consequences, including impacts to water resources, air quality, climate change, induced seismicity, human health and safety, and endangered, threatened, or other special status species.

These "environmental consequences" may be direct, indirect, or cumulative. 40 C.F.R. §§ 1502.16, 1508.7, 1508.8. A cumulative impact – particularly important here – is defined as:

> [T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 C.F.R. § 1508.7. The courts have repeatedly recognized that exploration, production, and foreseeably resulting combustion impacts from leasing and infrastructure decisions are indirect and/or cumulative impacts that must be considered under the NEPA regulations. *See S. Fork Band Council Of W. Shoshone Of Nevada v. U.S. Dep't of Interior*, 588 F.3d 718, 725 (9th Cir. 2009); *Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1214-15 (9th Cir. 2008); *Mid States Coalition for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 550 (8th Cir. 2003); *WildEarth Guardians v. United States Office of Surface Mining, Reclamation & Enf't*, 104 F. Supp. 3d 1208, 1230 (D. Colo. 2015); *Dine Citizens Against Ruining Our Env't v. United States Office of Surface Mining Reclamation & Enf't*, 82 F. Supp. 3d 1201 (D. Colo. 2015); *High Country Conservation Advocates v. United States Forest Serv.*, 52 F. Supp. 3d 1174 (D. Colo. 2014).

1. BLM's EA Violates NEPA By Failing to Take a Hard Look at Impacts to the Sheeprocks Sage-Grouse Population

The greater sage-grouse is a BLM sensitive species dependent, in large part, on the public lands for its survival and potential recovery. In September 2015, all BLM resource management plans for Idaho, Southwestern Montana, Nevada, Northeastern California, Oregon and Utah, including lands administered by the Fillmore Field Office, were amended as part of an effort to secure adequate regulatory mechanisms to prevent the listing of the greater sage-grouse under the Endangered Species Act.[1] Because oil and gas development and associated infrastructure has numerous well-documented adverse effects on GRSG survival, breeding, and behavior, these plan amendments prescribe management measures for BLM-permitted activities, including oil and gas leasing, within various categories (Sagebrush Focal Areas ("SFAs"), Priority Habitat Management Areas ("PHMAs"), General Habitat Management Areas ("GHMAs") and Other Habitat Management Areas ("OHMAs")) of sage-grouse habitat, and prescribed stipulations for all new fluid mineral leases within those designated habitats.[2]

The Sheeprocks population of greater sage-grouse that would be affected by the proposed action is of particular concern, having already triggered adaptive management measures under the plan as well as aggressive restoration and supplementation efforts. Parcels UTU 92485, UTU 92486, UTU 92487, UTU 92491, and UTU 92492 are all within or directly adjacent to habitat that has been designated as PHMA for the sage-grouse population following the "hard trigger" of documented population decline.

The Sheeprocks sage-grouse population is dwindling rapidly and is at high risk of local extirpation. BLM lacks any justifiable rationale for the BLM to propose leasing its habitat for oil and gas development less than two months after announcing that the rapid population decline had triggered additional conservation measures and mandatory adaptive management of its habitat.[3] If any population of sage-grouse and its habitat need to be managed for conservation, it is the

[1] See BLM, Utah Greater Sage-Grouse Approved Resource Management Plan Amendment (September 2015) ("Utah ARMPA").
[2] Great Basin ROD at 1-17.
[3] *See* Chelak, Melissa & Messmer, Terry. 2016. Jack H. Berryman Institute, Department of Wildland Resources. Utah State University. 2016 Annual Report. Population Dynamics and Seasonal Movements of Translocated and Resident Greater Sage-Grouse (Centrocercus Urophasianus), Sheeprock Sage-Grouse Management Area.

Sheeprocks sage-grouse and its Priority Habitat Management Areas (PHMAs).[4] To that end, the Sheeprock Sage Grouse Management Area (SGMA) was identified as "high risk" in the 2013 Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report (COT Report)[5]. COT Report at 70. At that time the Sheeprocks sage-grouse population had four of five negative indicators for Population Abundance and Estimated Quasi-Extinction Risk.[6] COT Report at 20. Since then, the male greater sage-grouse population in the Sheeprock SGMA "has experienced a nearly 40 percent decrease in population over the last four years, with an annual decrease in eight of the last ten years." BLM Press Release 2017. As a result, all five negative indicators for Population Abundance and Estimated Quasi-Extinction Risk are now present. Furthermore, the Utah ARMPA and the COT Report identified energy development as a present and widespread threat to the Sheeprocks sage-grouse population. Utah ARMPA at 1-10; COT Report at 20; West Desert Adaptive Resource Management Local Working Group 2012 Annual Report at 57 & Table 10 (risk to Sheeprocks breeding habitat quality from energy development is "very high").

In addition, the Sheeprocks population of greater sage-grouse was identified as small and isolated by the U.S. Fish and Wildlife Service (FWS) in 2015. FWS 2015 at 59928. FWS stated that small, isolated populations are more susceptible to impacts and relatively more vulnerable to extinction, and that these risks can increase as population size decreases. FWS at 59926-59927. As the COT Report noted, "[s]age-grouse populations can be significantly reduced, and in some cases locally extirpated, by non-renewable energy development activities, even when mitigative measures are implemented" COT Report at 10, citing Walker et al 2007.

Given the precarious state of the Sheeprocks sage-grouse population, allowing new oil and gas leasing inside the Sheeprock SGMA is highly risky. First, both the Utah Greater Sage Grouse Approved Resource Plan Amendment (Utah ARMPA) and the COT Report identified energy development as a present and widespread threat to the Sheeprocks sage-grouse population. Utah ARMPA at 1-10 and COT Report at 20. Second, not only is the Sheeprocks sage-grouse population unstable, but "[s]age-grouse populations can be significantly reduced, and in some cases locally extirpated, by non-renewable energy development activities, even when mitigative measures are implemented" COT Report at 10. Third, extirpation of the Sheeprocks sage-grouse population would make recovery of the greater sage-grouse as a whole more difficult by reducing management and recovery options in portions of the species' range, as the COT Report notes has already occurred in Washington state's Columbia Basin. COT Report at 32.

The BLM's approach to mitigating the effects of oil and gas development on GRSG is to attach stipulations to the leases. However, these stipulations are not absolute. Of the 10 GRSG

[4] PHMAs are "BLM-administered lands identified as having the highest value to maintaining sustainable GRSG [greater sage-grouse] populations." See I-5 of BLM (2015). Utah Greater Sage-Grouse Approved RMP Amendment.
[5] The COT Report was prepared by the Conservation Objectives Team, a panel of state and U.S. Fish and Wildlife Service (USFWS) experts chosen to develop range-wide conservation objectives for the sage-grouse to define the degree to which threats need to be reduced or ameliorated to conserve sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future. COT Report at 5.
[6] These indicators are <200 Males/500 birds, % Chance of <50 birds/20 males in 2037, % Chance of <500 birds/200 miles in 2037, % Chance of less than 50 birds/20 miles in 2017, % Chance of <500 birds/200 males in 2017. COT Report at 20.

stipulations in the EA, one can have exceptions and five can be modified.[7] As a result, these stipulations might or not actually be applied in the way they are described in the EA, and thus the mitigation that BLM suggests will occur might or might not actually take place.

This is not a hypothetical concern. A 2017 General Accountability Office report (GAO Report) found serious inconsistencies in BLM practice regarding exceptions to stipulations.[8] "The extent to which BLM approves requests for exceptions to environmentally related lease and permit requirements is unknown because BLM does not have comprehensive or consistent data on these requests. Additionally, BLM's processes for considering exception requests and documenting its decisions vary across its field offices." GAO Report at 11. Furthermore, the GAO Report found that the public is unlikely to have an opportunity to provide input to the BLM's decisions whether to grant exceptions. "BLM consistently involved the public when developing lease requirements and to some extent when developing permit requirements. However, BLM generally did not involve the public when considering an operator's request for an exception to a lease or permit requirement." GAO Report at 17. In fact, the public might not even be able to find out whether an exception was granted because "BLM does not currently require field offices to make the results of its exception decisions available to the public. Without access to this information, the public may not be able to provide substantive input into BLM's future land use planning processes." GAO Report at 35.

In fact, the BLM has already stated on the record that it will consider an exception to the No Surface Occupancy stipulation on sage-grouse Priority Management Habitat Areas (PHMAs) (UT-S-347), even though the BLM has described the Sheeprocks population of greater sage-grouse as "in jeopardy."[9] In this lease sale's Errata Sheet, the BLM responded to Kathleen Clarke, the former national Director of the BLM. Ms. Clarke commented to the BLM on behalf of the Office of the Governor of Utah's Public Lands Policy Coordinating Office and told the BLM that the NSO stipulation should be removed from the PHMA portions of these lease sale parcels. Clarke letter at 3. BLM replied, "The BLM must apply the appropriate stipulations from the ARMPA as of September 2015 If, at the time of development, it is determined that specific areas within the PHMA do not contain GRSG habitat the exception to the NSO stipulation can be considered." Errata Sheet at 3-4. The BLM's response to its former director baldly contradicted what the agency said elsewhere in the Errata Sheet and the EA, namely that the NSO stipulation will be applied to PHMA portions of the lease parcels and that sage-grouse habitat exists within them. *See* Errata Sheet at 2 and EA at 46, 48, 49, 50, 68, 73, 74, and 76. For example, the EA stated, "[H]abitat of varying quality and quantity is available for sage-grouse use within the parcels that overlap with PHMA. A No Surface Occupancy stipulation applies to the parcels, which would adequately protect the portions of PHMA habitat in these parcels." EA at 74.

Furthermore, the BLM asserted in the EA that it believes if it grants an exception to NSO stipulations on PHMA in the lease parcels, it does not have to allow the public to comment per

[7] EA at 52-57(stipulations UT-S-347 through350 and UT-S-352 through357).
[8] The GAO Report appears to include exceptions, modifications, and waivers of lease stipulations in the single term "exception." See GAO. (2017) Oil and Gas Development: Improved Collection and Use of Data Could Enhance BLM's Ability to Assess and Mitigate Environmental Impacts. Available at http://democrats-naturalresources.house.gov/imo/media/doc/GAO%20Report%20on%20BLM%20Waiving%20of%20Oil%20and%20Gas%20Lease%20Stipulations%20May%209%202017.pdf.
[9] The "in jeopardy" statement is on page three of BLM's Decision Record for the Government Creek Greater Sage-Grouse Habitat Improvement Project.

43 CFR §3101.1-4. EA at 75. This is a prime example of how the BLM has failed to take a hard look at impacts to sage-grouse. Since the BLM has stated that it will consider allowing oil and gas development on PHMA within the lease parcels AND that it does not think public comment would be necessary, the impacts to sage-grouse of allowing surface development of oil and gas on PHMA should have been analyzed in this EA. Based on the BLM's own statement, this EA is the only public comment period there would be for such an exception, but the BLM has provided no analysis of that exception's potential impacts.

2. BLM's EA Violates NEPA By Failing to Take a Hard Look at Impacts to the Mule Deer and Elk and Their Seasonal Ranges

The proposed lease sale parcels overlap mule deer and elk winter ranges. EA at 70 . The Draft EA acknowledged that disturbance to mule deer habitat from energy development can pose significant adverse effects on habitat use, survival, and recruitment. Draft EA at 38. The draft EA asserted that BLM's lease stipulations "would protect these resources by limiting disturbance within this habitat during the time period when it would have the most detrimental impact." Draft EA at 32. However, the Utah Division of Wildlife Resources has subsequently reclassified its classification of the relevant seasonal habitat from its prior category of "critical" to its new classification of "substantial." Because the BLM's governing RMP from 1987, the House Range Resource Area Management Plan, provides for no stipulations for habitat not designated as "critical" or "crucial," the final EA and proposed decision eliminate even minimal timing stipulations for protection of deer and elk winter range. EA at 39, 70. Despite the elimination of any protective measures for deer and elk seasonal ranges, the EA's minimal cumulative impacts discussion further, wholly without any analysis or quantification whatsoever, makes the conclusory assertion that "[t]he proposed action would contribute to impacts resulting from past, presently occurring and future activities in the CIAA. There could potentially be additional disturbance to habitat yet not enough to effect the population of local deer and elk populations." EA at 37.

These conclusory and unsupported assertions ignore significant new and additional research showing adverse effects to mule deer migrations and population from energy development. It further fails to justify BLM's refusal to engage in actual site-specific assessment of effects on particular deer subpopulations, winter use areas, and/or migration corridors. Merely describing the "the *category* of impacts anticipated from oil and gas development" fails to meet NEPA's hard look requirement when it is reasonable for BLM to do more. *See New Mexico*, 565 F.3d at 707 (emphasis original). "NEPA does not permit an agency to remain oblivious to differing environmental impacts, or hide these from the public, simply because it understands the general type of impact likely to occur. Such a state of affairs would be anathema to NEPA's 'twin aims' of informed agency decisionmaking and public access to information." *Id.*

Research shows that residential and energy development has reduced all ungulates across the West. The low-elevation valleys and mountain foothills, once important habitat for ungulates, are filled with cities and towns.[10] The same is true particularly on winter ranges.[11] For example,

[10] Polfus, J. L., and P. R. Krausman. 2012. Impacts of residential development on ungulates in the Rocky Mountain West. Wildlife Society Bulletin 36:647-657.

[11] Johnson, H.E., et al. 2016. Increases in residential and energy development are associated with reductions in recruitment for a large ungulate. Global Change Biology, doi: 10.1111/gcb.13385 ("Johnson et al. 2016").

between 1980 and 2010, western Colorado saw a 37% increase in residential land-use in mule deer habitat, primarily on their winter range.[12] The resulting lack of high-quality winter range is limiting robust mule deer population growth.[13]

An earlier dearth of high-quality, long-term, and controlled studies made it difficult to evaluate with precision the role of oil and gas development in mule deer habitat and population decline.[14] Clearly, mule deer demonstrate avoidance of roads and oil and gas infrastructure, with as-yet inadequately-understood consequences for migration, energy budgets, adult and fawn survival, and population.[15]

Some of the best available long-term, controlled studies evaluate mule deer population density before and after oil and gas development in the Sublette mule deer herd near Pinedale, Wyoming.[16] The Sublette mule deer study compared mule deer density in control and development zones, and found mule deer densities declined 30% in the development area, as opposed to 10% in the control area.[17] Sawyer and Strickland found that "the observed decline of mule deer in the treatment area was likely due to gas development, rather than drought or other environmental factors that have affected the entire Sublette Herd unit."[18]

The Sublette example is particularly important when considering energy development's effects on mule deer populations, their winter range, and their migration patterns in sagebrush habitats of the west. For example, even in its relatively early stages compared to Wyoming, the most recent spatial analysis of already-occurring effects on mule deer in western Colorado finds energy development has the second-largest effect on deer recruitment, exceeded only by residential development.[19]

Most recently, Hall Sawyer and colleagues published their conclusions from seventeen years of telemetry data on mule deer exposed to energy development in the gas fields of Wyoming, and found that, despite the using of timing stipulations and other, more aggressive, mitigation measures, development of oil and gas infrastructure within seasonal habitat and migration corridors has massive and long-term adverse effects on mule deer population levels:

> Mule deer consistently avoided energy infrastructure through the 15-year period of development and used habitats that were an average of 913 m further from well pads compared with predevelopment patterns of habitat use. Even during the last 3 years of study, when most wells were in production and reclamation efforts

[12] Johnson et al. 2016.
[13] Bergman, E. J.,et al. 2015. Density dependence in mule deer: a review of evidence. Wildlife Biology 21:18-29; Johnson et al. 2016.
[14] Hebblewhite, Mark. 2011. Effects of Energy Development on Ungulates. Energy Development and Wildlife Conservation in Western North America 71-94. Island Press, Washington D.C.
[15] Hebblewhite 2011; Sawyer, H., et al. 2013. A framework for understanding semi-permeable barrier effects on migratory ungulates. Journal of Applied Ecology 2013:50, doi:10.1111/1365-2664.12013; Lendrum, P.E. et al.. 2012. Habitat selection by mule deer during migration: effects of landscape structure and natural-gas development. Ecosphere 3(9):82.
[16] Sawyer, H., R. Nielson, and D. Strickland. 2009. Sublette Mule Deer Study (Phase II): Final Report 2007. Western Ecosystems Technology, Inc. Cheyenne, Wyoming, USA.
[17] *Id.*
[18] *Id.*
[19] Johnson et al. 2016.

> underway, mule deer remained >1 km away from well pads. The magnitude of avoidance behavior, however, was mediated by winter severity, where aversion to well pads decreased as winter severity increased. Mule deer abundance declined by 36% during the development period, despite aggressive onsite mitigation efforts (e.g. directional drilling and liquid gathering systems) and a 45% reduction in deer harvest. Our results indicate behavioral effects of energy development on mule deer are long term and may affect population abundance by displacing animals and thereby functionally reducing the amount of available habitat.[20]

Although the precise connections between energy development and population-level effects are still imperfectly understood, it is demonstrated that oil and gas development affects mule deer habitat use and migration patterns by causing site avoidance, particularly in daytime,[21] and creating "semi-permeable" barriers to migration routes.[22] The Colorado Division of Parks and Wildlife ("CPW") is currently engaged in multiple research efforts to evaluate energy development effects on migration, deer response to energy development, and fawn survival in developed and undeveloped areas.[23] Those studies have thus far documented how individual deer alter their migration speed and timing in response to development.[24] A 2015 Wildlife Research Report published by CPW found that, during an active drilling phase in the Piceance Basin, deer behavior was compromised by 25% (at nighttime) and by 50% (during day time) in critical mule deer winter range.[25]

In addition, it is well-documented that human development causes direct habitat loss and fragmentation through the construction of infrastructure, and indirect habitat loss through deer avoidance of infrastructure and related activities; these consequences likely reduce the carrying capacity of the landscape.[26] A recent study shows that oil and gas development causes significant habitat loss in the Piceance Basin of Colorado:

> Energy development drove considerable alterations to deer habitat selection patterns, with the most substantial impacts manifested as avoidance of well pads with active drilling to a distance of at least 800 m. Deer displayed more nuanced responses to other infrastructure, avoiding pads with active production and roads to a greater degree during the day than night. In aggregate, these responses equate

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[20] Sawyer, Hall et al., Mule Deer and Energy Development—Long-term trends of habituation and abundance, Global Change Biology 2017:1-9, *available at* http://onlinelibrary.wiley.com/doi/10.1111/gcb.13711/epdf.
[21] Lendrum 2012.
[22] Sawyer et al 2013.
[23] Anderson, C. R. 2015. Population Performance of Piceance Basin Mule Deer in Response to Natural Gas Resource Extraction and Mitigation Efforts to Address Human Activity and Habitat Degradation.in C. D. o. P. a. Wildlife, editor., Colorado ("Anderson 2015"); Anderson, C.R. 2016.; Anderson, C.R. and Bishop, C.J. 2014. Migration Patterns of Adult Female Mule Deer in Response to Energy Development. Transactions of the 79th North American Wildlife and Natural Resources Conference 47-50; Lendrum, P.E., et al. 2013. Migrating Mule Deer: Effects of Anthropogenically Altered Landscapes. PlosOne, 8:5:e64548.
[24] Lendrum 2012; Lendrum et al. 2013.
[25] Anderson 2015.
[26] Johnson et al. 2016.

to alteration of behavior by human development in over 50% of the critical winter range in our study area during the day and over 25% at night.[27]

Additionally, mule deer may suffer higher mortality rates in developed landscapes because of increased vehicle collisions and accidents (i.e., entrapment in fences); moreover, increased road densities expose mule deer to more hunters, poachers and predatory domestic pets.[28]

Mule deer also need migration corridors that are protected from human development. An ongoing mule deer study by members of the Wyoming Migration Initiative has found that mule deer migration patterns are altered by human development – herds will move faster, stop less to feed, and detour around developed portions of their route.[29] Moreover, herds that can't migrate in search of the most nutritious grasses just end up smaller in number, plain and simple.[30] As a result, Wyoming Game and Fish Department is working to further protect migration routes in the state, for instance, no more than four oil and gas well pads allowed in a migration corridor and no development allowed in corridors narrower than a quarter mile. Although initial CPW research suggests that existing Piceance development levels are largely influencing the timing (not the fact) of deer migration,[31] CPW acknowledges that a "threshold in development intensity" may have greater effects on migration behavior.[32]

Despite the substantial evidence and concern regarding development effects on mule deer migration and behavior, the EA fails to provide any disclosure or analysis whatsoever of migration routes that may be affected by development on the proposed leases.

Finally, the BLM should take into account new information indicating that sagebrush—which wintering mule deer are highly dependent on—is nearly impossible to restore, such that fragmentation of sagebrush communities from oil and gas development is likely to be permanent and reclamation ineffective. Recent studies show that sagebrush communities, such as those found within the areas to be leased, are nearly impossible to restore. Drilling sites have not been restored to pre-drilling conditions even after having 20 or 50 years to recover.[33] A recent study found that 50 years or more would be required to recover sagebrush on disturbed sites, and that restoring heterogeneous soil conditions with patchy nutrient conditions, was necessary for recovery of large sagebrush and ecosystem resiliency.[34] There is no evidence, however, that any measures required by the RMP-EISs here ensure attainment of these conditions. Thus, oil and

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[27] Northrup, J. M. et al. Quantifying spatial habitat loss from hydrocarbon development through assessing habitat selection patterns of mule deer, Global Change Biology (Aug. 2015), available at http://onlinelibrary.wiley.com/doi/10.1111/gcb.13037/epdf.

[28] Johnson et al. 2016.

[29] Sawyer 2013.

[30] Edwards, M., Mule Deer Struggling To "Surf The Green Wave" Of Migration (Nov. 20, 2015) available at http://wyomingpublicmedia.org/post/mule-deer-struggling-surf-green-wave-migration.

[31] Anderson & Bishop 2014.

[32] Anderson 2016; Sawyer 2013.

[33] Lester, Liza, Sagebrush Ecosystem Recovery Hobbled By Loss Of Soil Complexity At Development Sites, Ecological Society of America (Jan. 26, 2015), available at http://www.esa.org/esa/sagebrush-ecosystem-recovery-hobbled-by-loss-of-soil-complexity-at-development-sites/.

[34] *Id.*; Minnick, Tamara J., Plant–soil feedbacks and the partial recovery of soil spatial patterns on abandoned well pads in a sagebrush shrubland. Ecological Applications, 25(1), 2015, pp. 3–10, available at http://onlinelibrary.wiley.com/doi/10.1890/13-1698.1/full.

gas development could have more significant effects on mule deer and other big game than previously anticipated in the RMP-EISs, but those impacts have not been analyzed in the EA. *See* IM 2010-117 (directing site-specific analysis of whether "[t]he topographic, soils, and hydrologic properties of the surface will not allow successful final landform restoration and revegetation in conformance with the standards found in Chapter 6 of the Gold Book, as revised").

B. BLM's EA Violates NEPA By Failing to Take Into Account New Information Regarding the Sheeprocks Greater Sage-Grouse Population

The Great Basin ROD and Utah ARMPA rely on an assumption that the hard and soft triggers for adaptive management, combined with the prioritization mandate and lease stipulations, will result in oil and gas development not causing population-level effects. But that assumption is based on information about the Sheeprocks population that is badly outdated. The draft EIS for the Great Basin ROD and Utah ARMPA stated, "[p]resently, the Rich, Strawberry, Emery, and ***Sheeprocks population areas are considered to be increasing***" Draft EIS for Great Basin ROD at 3-9, emphasis added. The draft EIS's description of just the Sheeprocks population also stated, "Garton and others (2011) evaluate this population individually, and their population reconstruction suggests ***the population is generally increasing.***" Draft EIS at 3-29, emphasis added.

This sage-grouse plan EIS characterization of Sheeprocks sage-grouse as increasing in numbers is completely the opposite of the lease sale EA's assessment. For example, the lease sale EA's description of cumulative impacts of future oil and gas development stated, "***Because this population of sage-grouse is small and in a critical population decline***, the resistance and resiliency of this population to recovery from incremental increased human pressure, noise and disturbance, sage-grouse populations within the area could be further imperiled [from cumulative impacts]." EA at 37, emphasis added. The EA also stated, "In 2015, active male lek counts within the Sheeprocks Population Area were much reduced compared to 2006 active male lek counts. ***Because of a long-term downward population trend in this population***, a hard trigger has been met." EA at 23, emphasis added.[35]

Because the population trend data underlying the conservation measures in the Great Basin ROD and Utah ARMPA is now the opposite of what the BLM believed to be true when those conservation measures were approved, it is not enough for BLM to say that it is applying the conservation measures in the ROD and ARMPA to this lease sale. Those measures are now outdated, and as a result, the lease sale EA's reliance on them is insufficient.

BLM asserts in the EA that it cannot analyze effects of leasing and ensuing drilling on the Sheeprocks sage-grouse population because "Although the habitat use by sage-grouse in these parcels (002, 003, and 007) is unknown, the fundamental elements of sage-grouse habitat such as sagebrush, perennial grasses, and preferred forbs are present and may provide cover and forage for sage-grouse." EA at 24. However, BLM ignores the fact that substantial and detailed

[35] The BLM's clearest description of the Sheeprock sage-grouse population decline remains its February 2017 press release, which stated the male greater sage-grouse population in the Sheeprock SGMA "has experienced a nearly 40 percent decrease in population over the last four years, with an annual decrease in eight of the last ten years."

telemetry data regarding sage-grouse use of the Sheeprocks area is available and could have been utilized to provide site-specific analysis of the affected parcels' potential for grouse breeding and their role in potential recovery of the population. In 2016, following the observed sharp decline of the Sheeprocks population, researchers wildlife managers – including the BLM as a cooperating agency – translocated 40 sage-grouse into the Sheeprocks management area with radio-markings, and captured and radio-marked another 7 resident birds.[36] The translocation effort resulted in a detailed report, cited in the EA, providing substantial information on the birds' use of the Sheeprocks Management area, as well as proposals for additional research, analysis, and habitat improvement projects:

> Given the extensive seasonal movements made by several of the birds translocated from Box Elder SGMA, and the higher nest initiation rates for the Parker Mountain SGMA birds, it appears as though translocations in Box Elder may have been conducted too early in the season and the females may not have been ready to breed or were bred. Thus, upon release of the Box Elder birds, instead of visiting the leks and initiating nests, the females appeared to attempt to return to their source population or tried to find adequate habitat. For the 2017 field season, we are investigation the possibility of synchronizing the translocations and incorporating artificial insemination techniques which have proven successful in other gamebird translocation. If we receive approval for use of this technique, a portion of the translocated females from both populations will be inseminated with semen collected from resident males to see if it will increase their nest initiation rates.
>
> The high mortality rates recorded for the translocated birds later in the season are of particular concern. We will be initiating corvid/raptor and canid surveys in 2017 to develop better estimates of the abundance of predators in the area in response to predator control efforts. From the map above, it appears that most of the mortalities occurred within the Government lek, which exhibits lower habitat quality relative to Benmore and McIntyre lek areas. With the conifer removal projects currently under way, we would expect to see increased nest and brood success in 2017 (Sandford 2016).
>
> We will be conducting detailed habitat analyses to identify potential sites for projects relative to sage-grouse travel corridors, recorded mortalities, and habitat-use areas. Habitat fragmentation appears to be limiting the birds' survival and movements. We have provided a preliminary analysis for potential sites for conifer removal projects (Figs. 9-12).[37]

Despite the availability of this data, BLM fails to take a hard look, or any look at all, at how oil and gas development on the proposed parcels would intersect with Chelak and Messmer's radio-collared sage-grouse habitat use patterns, or how such development might affect the prospects for their proposed further research or other adaptive management actions by the Warm Springs Adaptive Management group, including habitat treatments and/or additional reintroductions.

[36] Chelak and Messmer at 6.
[37] *Id.* at 20-21.

BLM also asserts that conservation of sage-grouse does not require avoidance of leasing the affected parcels because of already-degraded habitat. BLM asserts:

> The presence of juniper, nearby powerlines, and columnar sagebrush shape may also reduce habitat favorability in this area for sage-grouse. In Parcel 001, the composition and diversity of the sagebrush community has been reduced due to past wildfire and wildfire rehabilitation efforts, which has resulted in a vegetation community that is largely perennial (crested wheatgrass) and annual grasses with a reduced sagebrush component. Riparian habitat associated with meadows, wetlands, stream, seeps, and springs is absent from all the parcels, which limits the value of the habitat to provide for late brood-rearing activities. Sage-grouse habitat declines sharply at the eastern and southern PHMA habitat boundary of parcels 001, 002, 003, and 007 as the slopes increase and the juniper increases. Regarding parcels 004, 005, 006, 008, and 009, sage-grouse habitat quality/quantity substantially declines south of the PHMA boundary due to heavy juniper occurrence and the fragmentation and absence of remnant sagebrush communities.

EA at 24. This dismissal of the value of priority habitat ignores the established fact that numerous parties, including the BLM, are engaged in adaptive management efforts to restore habitat function for the Sheeprocks population. *See* Chelak and Messmer at 16 and Figure 4 (marking completed and proposed restoration projects). The final EA fails to acknowledge the existence of these completed and ongoing restoration efforts, let alone make any meaningful assessment of how they may be affected by the introduction of well pads, roads, and other infrastructure required for oil and gas exploration and development activities that would be authorized by the proposed leases.

C. NEPA Requires That BLM Prepare an Environmental Impact Statement

NEPA demands that a federal agency prepare an EIS before taking a "'major [f]ederal action[] *significantly* affecting the quality' of the environment."[38] In order to determine whether a project's impacts may be "significant," an agency may first prepare an Environmental Assessment ("EA").[39] If the EA reveals that "the agency's action may have a significant effect upon the . . . environment, an EIS must be prepared."[40]

The issues discussed above show that the potential impacts that the proposed action could have on the environment are indeed significant, which compels the preparation of an EIS. These factors include:

- the potential changes that climate change may cause as a result of oil and gas operations;
- the speculative nature of the quantity of drilling activity that could possibly occur in the next twenty years on federal, state, and private lands;

[38] *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1067 (9th Cir. 2002) (emphasis added).
[39] 40 C.F.R. §§ 1501.4, 1508.9.
[40] *Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 730 (9th Cir. 2001) (internal quotations omitted).

- the threat well-development poses to public health and safety; and
- the potentially devastating impacts of increased oil and gas development on endangered, threatened, and BLM-sensitive species

An EIS must be prepared if substantial "questions are raised as to whether a project . . . may cause significant degradation of some human environmental factor."[41] It is not necessary to show that significant effects will in fact occur; raising substantial questions about whether a project *may* have a significant effect is enough to trigger BLM's obligation to prepare an EIS.[42] Because the aforementioned impacts are likely to have a significant effect on the environment, BLM is legally required under NEPA to prepare an EIS. This is especially true in light of the likelihood that fracking would occur on the leases.

In considering whether the proposed oil and gas leasing would have significant effects on the environment, NEPA's regulations require BLM to evaluate ten factors regarding the "intensity" of the impacts.[43] The existence of any "one of these factors may be sufficient to require preparation of an EIS."[44] Several of these "significance factors" are implicated in this proposed action and clearly warrant the preparation of an EIS:

- The degree to which the effects on the quality of the human environment are likely to be highly controversial.
- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
- The degree to which the proposed action affects public health or safety.
- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.[45]

Here, individually and considered as a whole, there is no doubt that significant effects may result from this proposal; thus, NEPA requires that BLM must prepare an EIS for the action.

In particular, an EIS may also be required when an action "may adversely affect an endangered or threatened species or its habitat." 40 C.F.R. § 1508.27(b)(9). Although a finding that a project has "some negative effects does not mandate a finding of significant impact," an agency must nonetheless fully and closely evaluate the effects on listed species and issue an EIS

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[41] *Ocean Advocates v. United States Army Corps of Eng'rs*, 402 F.3d 846, 864-65 (9th Cir. 2005) (internal quotes omitted).
[42] *Id.*
[43] 40 C.F.R. § 1508.27(b); *see also Center for Biological Diversity, et al. v. Bureau of Land Management, et al.*, 937 F. Supp. 2d 1140, 1155-59 (holding that oil and gas leases were issued in violation of NEPA where BLM failed to prepare an EIS and failed to properly address the significance factors for context and intensity in 40 C.F.R. § 1508.27).
[44] *Ocean Advocates*, 402 F.3d at 865; *Nat'l Parks & Conservation Ass'n*, 241 F.3d at 731.
[45] 40 C.F.R. § 1508.27(b)(4), (5), (2) & (9); *See Center for Biological Diversity*, 937 F. Supp. 2d at 1158-59 (holding that BLM failed to properly address the significance factors regarding controversy and uncertainty that may have been resolved by further data collection (citing *Native Ecosystems Council v. U.S. Forest Serv.*, 428 F.3d 1233, 1240 (9th Cir. 2005)).

if those impacts are significant. *Klamath-Siskiyou Wildlands Ctr. v. U.S. Forest Serv.*, 373 F. Supp. 2d 1069, 1081 (E.D. Cal. 2004) (finding agency's conclusion that action "may affect, is likely to adversely affect" species due to "disturbance and disruption of breeding" and "degradation" of habitat is "[a]t a minimum, . . . an important factor supporting the need for an EIS"). As discussed above, the proposed action would adversely affect a population of greater sage-grouse that has already triggered additional protective measures under the governing Resource Management Plan due to the precarious state of the Sheeprocks grouse population.

D. The Proposed Lease Sale Violates FLPMA's Requirement for Consistency with Approved Resource Management Plans

The land use planning mandate of the Federal Land Policy and Management Act ("FLPMA"), 43 U.S.C. §§ 1732(a), (b), and the plan consistency regulation thereunder, 43 C.F.R. § 1610.5-3(a), render compliance with operational limits enshrined in an amended land use plan a specific nondiscretionary duty for purposes of the lease conditions rule. FLPMA provides that "[t]he Secretary shall manage the public lands under principles of multiple use and sustained yield, in accordance with the land use plans developed by him under section 1712 of this title." 43 U.S.C. § 1732(a). BLM regulations provide that all site-specific actions (including drilling permit issuance) correspond to those plans. 43 C.F.R. § 1610.5-3(a) ("All future resource management authorizations and actions, as well as budget or other action proposals to higher levels in the Bureau of Land Management and Department, and subsequent more detailed or specific planning shall conform to the approved plan."). Land use planning and plan consistency is specific and mandatory under FLPMA.

BLM's proposed decision to lease priority habitat management areas for greater sage-grouse habitat fails to conform to BLM's Utah Greater Sage-Grouse Resource Management Plan Amendments, specifically the mandate to "[p]rioritize the leasing and development of fluid mineral resources outside of GRSG habitat," Utah ARMPA at 1-11.. The conservation measures in the Great Basin ROD and UT ARMPA are two key parts of the federal government's strategy to preserve the greater sage-grouse, which the BLM has stated "offers the highest level of protection for GRSG in the most important habitat areas." Great Basin ROD at S-1. Furthermore, "[t]he cumulative effect of these measures is to conserve, enhance, and restore GRSG [greater sage-grouse] habitat across the species' remaining range in the Great Basin Region and to provide greater certainty that BLM management plan decisions in GRSG habitat in the Great Basin Region can lead to conservation of the GRSG and other sagebrush-steppe associated species in the region." Great Basin ROD at S-2. Ultimately, "[t]he goal is to achieve the COT Report objective of 'conserv[ing] the sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the forseeable future.' " *Ibid.*

The Great Basin ROD explains why prioritization is necessary:

> In addition to allocations that limit disturbance in PHMAs and GHMAs, the ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs and GHMAs to further limit future surface disturbance and to encourage new development in areas that would not conflict with GRSG. ***This objective is intended to guide development to lower conflict areas and, as such, protect important habitat and reduce the time and cost associated with oil and gas leasing development.*** It would do this by avoiding sensitive areas, reducing the

complexity of environmental review and analysis of potential impacts on sensitive species, and decreasing the need for compensatory mitigation.

Great Basin ROD at 1-23, emphasis added.

The Utah ARMPA contains "goals, objectives, land use allocations, and management actions established for protecting and preserving GRSG and its habitat on public lands managed by the BLM in Utah." Utah ARMPA at 2-2. Its Objective MR 1 states, "Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMAs and GHMAs. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMAs and GHMAs, that are subject to applicable stipulations for the conservation of GRSG, priority will be given to development in non-habitat areas first and then in the least suitable habitat for GRSG." UT ARMPA at 2-25.

On September 1, 2016, BLM's Washington, D.C. office issued Instruction Memorandum 2016-143, *Implementation of Greater Sage-Grouse Resource Management Plan Revisions or Amendments -Oil & Gas Leasing and Development Sequential Prioritization* (September 1, 2016) ("IM 2016-143"), to the BLM's State Directors, providing "guidance on prioritizing implementation decisions for . . . BLM oil and gas leasing and development" to be consistent with the Greater Sage-Grouse plan amendments.

BLM's proposed decision to lease the parcels listed above does not conform to the agency's House Range RMP, as amended by the GRSG amendments and the Great Basin ROD, because the leasing EA (a) does not consider site-specific impacts to Greater Sage-Grouse and (b) does not prioritize leasing outside of Priority and General Habitat Management Areas IM 2016-143's purpose is to provide consistency across the agency when leasing decisions impact Greater Sage-Grouse habitat. It provides a "prioritization sequence" for BLM state offices to follow when choosing to lease areas near or in Greater Sage-Grouse habitats.

IM 2016-143 instructs BLM that "[a]t the time the leasing priority is determined, when leasing within GHMA or PHMA is considered, BLM should consider, first, areas determined to be non-sage-grouse habitat and then consider areas of lower value habitat." *Id.* The proposed action does the opposite – it makes vulnerable to development the remaining habitat of one of the most imperiled sage-grouse populations in existence.

IM 2016-143 mandates that "BLM State Offices will use the following prioritization sequence for considering leasing *in or near GRSG habitat*, while also considering the 'Factors to Consider While Evaluating EOIs in Each Category.'" Thus, BLM's own guidance is clear that the prioritization sequence and relevant factors must be considered for parcels both within and adjacent to Greater Sage-Grouse Habitat. The EA fails to consider any of these parcel-specific factors.

The proposed Fillmore lease sale EA states, "[p]arcels were prioritized by the Fillmore Field Office consistent with Instruction Memorandum 2016-143 Implementation of Greater Sage-Grouse Resource Management Plan Revisions or Amendments – Oil and Gas Leasing and Development Sequential Prioritization." EA at 4-5. However, BLM's IM 2016-143 specifies individual factors to be taken into account during prioritization. Although this lease sale's EA repeatedly states that a prioritization sequence took place, it offers no evidence that these

individual factors were considered, nor how BLM can reconcile the requirement to avoid the most sensitive sage-grouse habitat with its proposed action in this lease sale.

BLM's IM 2016-143 sets out the methods by which BLM will prioritize leasing in and around Greater Sage Grouse habitat. The IM directs the agency to prioritize leasing in the following order:

1. Lands outside of GHMAs and PHMAs: BLM State Offices will first consider leasing EOIs for lands outside of PHMAs and GHMAs. These lands should be the first priority for leasing in any given lease sale.

2. Lands within GHMAs: BLM State Offices will consider EOIs for lands within the GHMAs, after considering lands outside of both GHMAs and PHMAs. When considering the GHMA lands for leasing, the BLM State Office will ensure that a decision to lease those lands would conform to the conservation objectives and provisions in the GRSG Plans (e.g., Stipulations).

3. Lands within PHMAs: BLM state offices will consider EOIs for lands within PHMAs after lands outside of GHMAs and PHMAs have been considered, and EOIs for lands within GHMA have been considered. When considering the PHMA lands for leasing, the BLM State Offices will ensure that a decision to lease those lands would conform to the conservation objectives and provisions in the GRSG Plans (e.g., Stipulations) including special consideration of any identified SFAs.

IM 2016-143 also identifies additional prioritization factors that BLM must consider:

- Parcels immediately adjacent or proximate to existing oil and gas leases and development operations or other land use development should be more appropriate for consideration before parcels that are not near existing operations. This is the most important factor to consider, as the objective is to minimize disturbance footprints and preserve the integrity of habitat for conservation.
- Parcels that are within existing Federal oil and gas units should be more appropriate for consideration than parcels not within existing Federal oil and gas units.
- Parcels in areas with higher potential for development (for example, considering the oil and gas potential maps developed by the BLM for the GRSG Plans) are more appropriate for consideration than parcels with lower potential for development. The Authorized Officer may conclude that an area has "higher potential" based on all pertinent information, and is not limited to the Reasonable Foreseeable Development (RFD) potential maps from Plans analysis.
- Parcels in areas of lower-value sage-grouse habitat or further away from important life-history habitat features (for example, distance from any active sage-grouse leks) are more appropriate for consideration than parcels in higher-value habitat or closer to important life-history habitat features (i.e. lek, nesting, winter range areas). At the time the leasing priority is determined, when leasing within GHMA or PHMA is considered, BLM should consider, first, areas determined to be non-sage-grouse habitat and then consider areas of lower value habitat.

- Parcels within areas having completed field-development Environmental Impact Statements or Master Leasing Plans that allow for adequate site-specific mitigation and are in conformance with the objectives and provisions in the GRSG Plans may be more appropriate for consideration than parcels that have not been evaluated by the BLM in this manner.
- Parcels within areas where law or regulation indicates that offering the lands for leasing is in the government's interest (such as in instances where there is drainage of Federal minerals, 43 CFR § 3162.2-2, or trespass drilling on unleased lands) will generally be considered more appropriate for leasing, but lease terms will include all appropriate conservation objectives and provisions from the GRSG Plans.

IM 2016-143.

However, this lease sale's EA fails to follow IM 2016-143's guidance, and fundamentally fails to conform with the prioritization requirement in the amended RMP, in a number of ways.

First, including the parcels with sage-grouse PHMA in this lease sale does not conform to IM 2016-143's instruction about proximity to previous oil and gas development. The IM states, "Parcels immediately adjacent or proximate to existing oil and gas leases and development operations or other land use development should be more appropriate for consideration before parcels that are not near existing operations. ***This is the most important factor to consider, as the objective is to minimize disturbance footprints and preserve the integrity of habitat for conservation.***" IM 2016-143, emphasis added. The EA's Appendix E (Map of Parcels with PHMA and Existing Leases) shows there are no existing oil and gas development operations immediately adjacent or proximate to the lease parcels. Nor are the general area's six capped and abandoned wells immediately adjacent or proximate to these lease parcels. EA Appendix E (page 72). Of the lease sale's four parcels that contain sage-grouse PHMA (parcels 001, 0002, 0003, and 0007), the Appendix E map shows no existing leases immediately adjacent or proximate to parcels 0001 and 0007. Parcel 0007 is particularly sensitive. According to the EA, 95% of parcel 0007 includes greater sage-grouse PHMA. EA at 24.

Second, IM 2016-43 states, "[p]arcels that are within existing Federal oil and gas units should be more appropriate for consideration than parcels not within existing Federal oil and gas units." However, these lease sale parcels are not part of a Federal oil and gas unit, and this lease sale's EA does not mention Federal oil and gas units at all.

Third, IM 2016-43 states, "[p]arcels in areas with higher potential for development (for example, considering the oil and gas potential maps developed by the BLM for the GRSG Plans) are more appropriate for consideration than parcels with lower potential for development." This lease sale's EA describes these parcels' development potential as follows:

> The West Desert Districts and western part [of] the Color Country District of the BLM lie within the Great Basin and the lower Colorado basin. Within the part of the State of Utah within these hydrographic basins there is one small discovery producing oil, the Wolverine field in Sevier County Utah. Outside of the area adjacent to this discovery, the development potential within the entire region is low; however new methods for finding and extracting hydrocarbons drives

> exploratory activities along with oil and gas leasing. If leased, a "wildcat" well, or one drilled in anticipation of a "strike," may be drilled on one or more of the leases sold in any lease sale. However, the great majority of parcels leased in the region in the past have never undergone any drilling activity.
>
> EA at 8.

In other words, the BLM sees little chance that these lease parcels will produce oil or gas unless some as yet unknown new technology is invented in the future, successfully commercialized and brought to market, and then implemented here. Furthermore, the "one small discovery producing oil" is in Sevier County; these proposed lease parcels are in Juab County, which is not adjacent to Sevier County.

Fourth, IM 2016-143 states, "[p]arcels in areas of lower-value sage-grouse habitat or further away from important life-history habitat features (for example, distance from any active sage-grouse leks) are more appropriate for consideration than parcels in higher-value habitat or closer to important life-history habitat features (i.e. lek, nesting, winter range areas)." According to this lease sale's EA, 100% of the PHMA acreage in the parcels proposed to be leased is highly important to the sage-grouse life cycle because it contains habitat used during the winter and for brood reading.[46] *See* Table 5, EA at 24. In addition, the EA asserts that parcel 0007 is approximately five miles from the active Furner Valley sage-grouse lek. EA at 24.

Fifth, IM 2016-143 states, "[p]arcels within areas having completed field-development Environmental Impact Statements or Master Leasing Plans that allow for adequate site-specific mitigation and are in conformance with the objectives and provisions in the GRSG Plans may be more appropriate for consideration than parcels that have not been evaluated by the BLM in this manner." This lease sale's EA indicates that no field development Environmental Impact Statement has been done.[47] The EA also provides no evidence that a Master Leasing Plan exists; Master Leasing Plans are not mentioned in the EA.

Sixth, IM 2016-143 states, "[p]arcels within areas where law or regulation indicates that offering the lands for leasing is in the government's interest (such as in instances where there is drainage of Federal minerals, 43 CFR § 3162.2-2, or trespass drilling on unleased lands) will generally be considered more appropriate for leasing, but lease terms will include all appropriate conservation objectives and provisions from the GRSG Plans." However, this lease sale's EA makes clear that drainage or trespass drilling of federal minerals is not at issue.

E. BLM's Proposed Action Violates Its Sensitive Species Policy

Although it has not been listed under the Endangered Species Act, due in large part to assumptions about the efficacy of the BLM's land use planning revisions and adaptive management measures, the greater sage-grouse remains a BLM sensitive species and subject to the agency's Sensitive Species policy and manual provisions. BLM Manual 6840 provides, "[a]ll Federal candidate species, proposed species, and delisted species in the 5 years following delisting will be conserved as Bureau sensitive species."[48] The Objective of Manual 6840 is

[46] The EA states that these habitat determinations are based on Utah Division of Wildlife Resources data. EA at 23.
[47] See EA at 28.
[48] Manual 6840 at § .01.

"[t]o initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of and need for listing of these species under the ESA."[49] Manual 6840 further states that it is the BLM's Policy to promote the "conservation and to minimize the likelihood and need for listing" Bureau sensitive species.[50]

Furthermore, pursuant to Manual 6840 it is the responsibility of State Directors to not only inventory BLM lands to determine the occurrence of BLM special status species, but also to determine "the condition of the populations and their habitats, and how discretionary BLM actions affect those species and their habitats."[51] The leasing of federal lands for oil and gas extraction is a discretionary BLM action that has the potential to adversely affect the greater sage-grouse, and the Sheeprocks population in particular. As BLM acknowledges in the EA, "Oil and gas activities when combined with past, present and future activities will contribute to reduced habitat quantity/quality, habitat fragmentation, and reduced connectivity as well as may alter seasonal movements and habitat use. Because this population of sage-grouse is small and in a critical population decline, the resistance and resiliency of this population to recovery from incremental increased human pressure, noise and disturbance, sage-grouse populations within the area could be further imperiled."[52]

Deferring meaningful analysis of the potential effects of selling oil and gas leases to the APD stage is entirely inconsistent with the requirements of Manual 6840. If a lease is sold, the lessee acquires certain contractual rights constraining BLM authority. For example, according to 43 C.F.R. § 3101.1-2, once a lease is issued to its owner, that owner has the "right to use as much of the lease lands as is necessary to explore for, drill for, mine, extract, remove and dispose of the leased resource in the leasehold" subject to specific nondiscretionary statutes and lease stipulations. Therefore, once the lease is sold, it will be too late for BLM to ensure that sufficient protections will be in place to protect this species from the cumulative impacts of extraction-related activities.

Furthermore, pursuant to Manual 6840 Bureau sensitive species are considered BLM special status species, and Section 2 of the Manual provides specific measures that BLM is required to undertake in order to "conserve these species and their habitats."[53] To implement this section, BLM "shall... minimize or eliminate threats" affecting Bureau sensitive species, by determining their current threats and habitat needs, and ensuring that BLM activities "are carried out in a way that is consistent with its objectives for managing those species and their habitats at the appropriate spatial scale."[54] Due to the potential harms from habitat loss and fragmentation, the appropriate spatial scale for determining threats to sensitive plants and animals from oil and gas development is the entire area subject to lease sales, rather than the piecemeal, limited APD-specific review that BLM is attempting to employ.

The need for a broader analysis to assess the threats to this species from the lease sale itself is further supported by Manual 6840's requirement that BLM work with partners and

[49] *Id.* at § .02 (emphasis added).
[50] *Id.* at § .06.
[51] *Id.* at § .04.
[52] EA at 37.
[53] BLM Manual *Id.* at § .2.
[54] *Id.* at § .2(C) (emphasis added).

stakeholders to "develop species-specific or ecosystem-based conservation strategies," and in the absence of such strategies, to incorporate standard operating procedures and other conservation measures "to mitigate specific threats to Bureau sensitive species during the planning of activities and projects."[55] Postponing any analysis of impacts to sensitive plants and raptors until the later APD stage forecloses the implementation of standard procedures and conservation measures necessary to mitigate threats to the species during exploration or other actions that might take place prior to an APD being filed, since as noted above once a lease is issued, the owner has the "right to use as much of the lease lands as is necessary to explore for, drill for, mine, extract, remove and dispose of the leased resource in the leasehold."[56]

Moreover, the development of species-specific and ecosystem-based conservation strategies implicitly necessitates a more holistic review of the cumulative impacts of the proposed lease sale, which cannot be accomplished through site-specific APD-stage analysis alone. And, piecemeal analyses of individual lease sales do not provide the appropriate perspective for examining the cumulative effects of hydraulic fracturing and climate change impacts at the regional and landscape scale and for making land management decisions.

Where activities have the potential to adversely impact species of concern, the general practice is to consider those impacts and address them "at the earliest possible time," in order to avoid delay, ensure that impacts are avoided and opportunities for mitigation are not overlooked.[57] This is likewise true in the context of even more general environmental review, such as under NEPA.[58] Furthermore, it is general practice to evaluate the impacts of several related projects with cumulative impacts proposed or reasonably foreseeable in the same geographic region in a single, comprehensive, analysis.[59] Likewise, under the ESA an analysis of the effects of an action must consider actions that are interrelated or interdependent.[60] This suggests that BLM should consider the effects of oil and gas extraction activities at the lease sale stage, since those actions are inherent in leasing land for such purposes. It is therefore evident that in order to effectuate the policy of protecting Bureau sensitive species set forth in Manual 6840,[61] and consistent with the established practice of early, comprehensive review of potential impacts to sensitive species, BLM must consider impacts to ~~the burrowing owl, pygmy rabbit and other~~ sensitive species at the lease sale, rather than waiting until the APD stage for project specific review.

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[55] *Id.* (emphasis added).
[56] 43 C.F.R. § 3101.1-2.
[57] *See i.e.* 50 C.F.R. §§ 402.14(a), (g)(8).
[58] *See* 40 C.F.R. § 1501.2 ("Agencies shall integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts.").
[59] *See Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976) ("when several proposals for . . . actions that will have cumulative or synergistic environmental impact upon a region are pending concurrently before an agency, their environmental consequences must be considered together.").
[60] 50 C.F.R. §§ 402.14 and 402.02.
[61] *See* BLM Manual 6840 at .06 ("Bureau sensitive species will be managed consistent with species and habitat management objectives in land use and implementation plans to promote their conservation and to minimize the likelihood and need for listing under the ESA.").

In sum, BLM has issued regulations in Manual 6840 that require the agency to undertake actions to protect candidate species, much like they protect proposed and listed species. Delaying an analysis of impacts to other sensitive species until the APD stage risks harm to an at-risk species that could otherwise be avoided. A failure to address the impacts to sensitive species at the lease sale stage violates BLM's own regulations set forth in Manual 6840, is entirely inconsistent with established practice and policies regarding species protection, and is therefore arbitrary and capricious agency action under the Administrative Procedure Act.

F. BLM's EA Violates NEPA By Failing to Disclose Climate Impacts or Consider Alternatives to Mitigate Those Impacts

Climate change is a problem of global proportions resulting from the cumulative greenhouse gas emissions of countless individual sources. Although public land fossil fuel production accounts for approximately 21% of total U.S. greenhouse gas emissions and 24% of energy-related emissions, BLM has never thoroughly considered the cumulative climate change impacts of its fossil fuel leasing actions (1) within each of the planning areas, (2) across the state, and (3) across all public lands. Proceeding with new leasing proposals ad hoc in the absence of a comprehensive plan that addresses climate change and fracking is premature and risks irreversible damage before the agency and public have had the opportunity to weigh the full costs of oil and gas and other fossil fuel extraction and consider necessary limits on such activities.

BLM must defer all new leasing at least until the issue is adequately analyzed in a programmatic review of all U.S. fossil fuel leasing, or at least within amended RMPs that adequately consider cumulative climate impacts and mitigation measures. Even assuming that permanent cessation of leasing would require RMP amendment or mineral withdrawal, actions beyond the immediate scope of this leasing decision, agencies are obligated to consider <u>all</u> reasonable alternatives. Considering a no-leasing alternative would allow the agency to preserve the status quo and avoid irretrievable commitment of resources until such time as it can consider the regional and national impacts of fossil fuel leasing and undertake appropriate land use plan amendments or other actions.

Expansion of fossil fuel production will substantially increase the volume of greenhouse gases emitted into the atmosphere and jeopardize the environment and the health and well being of future generations. BLM's mandate to ensure "harmonious and coordinated management of the various resources *without permanent impairment of the productivity of the land and the quality of the environment*" requires BLM to limit the climate change effects of its actions.[62] Keeping all unleased fossil fuels in the ground and banning fracking and other unconventional well stimulation methods would lock away millions of tons of greenhouse gas pollution and limit the destructive effects of these practices.

BLM must consider an alternative ending new public lands fossil fuel leasing and fracking is in the interest of meeting the U.S.'s greenhouse gas reduction commitments. On December 12, 2015, 197 nation-state and supra-national organization parties meeting in Paris at

[62] *See* 43 U.S.C. §§ 1701(a)(7), 1702(c), 1712(c)(1), 1732(a) (emphasis added); *see also id.* § 1732(b) (directing Secretary to take any action to "prevent unnecessary or undue degradation" of the public lands).

the 2015 United Nations Framework Convention on Climate Change Conference of the Parties consented to an agreement (Paris Agreement) committing its parties to take action so as to avoid dangerous climate change.[63] The Paris Agreement commits the United States to critical goals—both binding and aspirational—that mandate bold action on the United States' domestic policy to rapidly reduce greenhouse gas emissions.[64] Despite statements by the administration regarding intent to withdraw from the Agreement at a future date, the Agreement remains in effect, and the science of climate change and fossil fuel emissions remains unchanged.

The United States and other parties to the Paris Agreement recognized "the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge."[65] The Paris Agreement articulates the practical steps necessary to obtain its goals: parties including the United States have to "reach global peaking of greenhouse gas emissions *as soon as possible* . . . and to *undertake rapid reductions* thereafter in accordance *with best available science*,"[66] imperatively commanding that developed countries specifically "should continue taking the lead by undertaking economy-wide absolute emission reduction targets"[67] and that such actions reflect the "highest possible ambition."[68]

The Paris Agreement codifies the international consensus that climate change is an "urgent threat" of global concern,[69] and commits all signatories to achieving a set of global goals. Importantly, the Paris Agreement commits all signatories to an articulated target to hold the long-term global average temperature "to *well below 2°C* above pre-industrial levels and to *pursue efforts to limit the temperature increase to 1.5°C* above pre-industrial levels"[70] (emphasis added).

In light of the severe threats posed by even limited global warming, the Paris Agreement established the international goal of limiting global warming to 1.5°C above pre-industrial levels in order to "prevent dangerous anthropogenic interference with the climate system," as set forth in the UNFCCC, a treaty which the United States has ratified and to which it is bound.[71] The Paris consensus on a 1.5°C warming goal reflects the findings of the IPCC and numerous scientific studies that indicate that 2°C warming would exceed thresholds for severe, extremely dangerous, and potentially irreversible impacts.[72] Those impacts include increased global food

[63] U.N. Framework Convention on Climate Change, Paris Agreement ("Paris Agreement"), Art. 2.
[64] Although not every provision in the Paris Agreement is legally binding or enforceable, the U.S. and all parties are committed to perform the treaty commitments in good faith under the international legal principle of *pacta sunt servanda* ("agreements must be kept"). Vienna Convention on the Law of Treaties, Art. 26.
[65] *Id.*, Recitals.
[66] *Id.*, Art. 4(1).
[67] *Id.*, Art. 4(4).
[68] *Id.*, Art. 4(3).
[69] *Id.*, Recitals.
[70] *Id.*, Art. 2.
[71] *See* U.N. Framework Convention on Climate Change, Cancun Agreement. Available at http://cancun.unfccc.int/ (last visited Jan 7, 2015); United Nations Framework Convention on Climate Change, Copenhagen Accord. Available at http://unfccc.int/meetings/copenhagen_dec_2009/items/5262.php (last accessed Jan 7, 2015). The United States Senate ratified the UNFCC on October 7, 1992. *See* https://www.congress.gov/treaty-document/102nd-congress/38.
[72] *See* Paris Agreement, Art. 2(1)(a); U); U.N. Framework Convention on Climate Change, Subsidiary Body for Scientific and Technical Advice, Report on the structured expert dialogue on the 2013-15 review, No. FCCC/SB/2015/INF.1 at 15-16 (June 2015);IPCC AR5 Synthesis Report at 65 & Box 2.4.

and water insecurity, the inundation of coastal regions and small island nations by sea level rise and increasing storm surge, complete loss of Arctic summer sea ice, irreversible melting of the Greenland ice sheet, increased extinction risk for at least 20-30% of species on Earth, dieback of the Amazon rainforest, and "rapid and terminal" declines of coral reefs worldwide.[73] As scientists noted, the impacts associated with 2°C temperature rise have been "revised upwards, sufficiently so that 2°C now more appropriately represents the threshold between 'dangerous' and 'extremely dangerous' climate change."[74] Consequently, a target of 1.5 °C or less temperature rise is now seen as essential to avoid dangerous climate change and has largely supplanted the 2°C target that had been the focus of most climate literature until recently.

Immediate and aggressive greenhouse gas emissions reductions are necessary to keep warming below a 1.5° or 2°C rise above pre-industrial levels. Put simply, there is only a finite amount of CO_2 that can be released into the atmosphere without rendering the goal of meeting the 1.5°C target virtually impossible. A slightly larger amount could be burned before meeting a 2°C became an impossibility. Globally, fossil fuel reserves, if all were extracted and burned, would release enough CO_2 to exceed this limit several times over.[75]

The question of what amount of fossil fuels can be extracted and burned without negating a realistic chance of meeting a 1.5 or 2°C target is relatively easy to answer, even if the answer is framed in probabilities and ranges. The IPCC Fifth Assessment Report and other expert assessments have established global carbon budgets, or the total amount of remaining carbon that can be burned while maintain some probability of staying below a given temperature target. According to the IPCC, total cumulative anthropogenic emissions of CO_2 must remain below about 1,000 gigatonnes ($GtCO_2$) from 2011 onward for a 66% probability of limiting warming to 2°C above pre-industrial levels.[76] Given more than 100 $GtCO_2$ have been emitted since 2011,[77] the remaining portion of the budget under this scenario is well below 900 $GtCO_2$. To have an

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[73] *See* Jones, C. et al, Committed Terrestrial Ecosystem Changes due to Climate Change, 2 Nature Geoscience 484, 484–487 (2009); Smith, J. B. *et al.*, Assessing Dangerous Climate Change Through an Update of the Intergovernmental Panel on Climate Change (IPCC) 'Reasons for Concern', 106 Proceedings of the National Academy of Sciences of the United States of America 4133, 4133–37 (2009); Veron, J. E. N. *et al.*, The Coral Reef Crisis: The Critical Importance of <350 ppm CO2, 58 Marine Pollution Bulletin 1428, 1428–36, (2009); Warren, R. J. *et al.*, Increasing Impacts of Climate Change Upon Ecosystems with Increasing Global Mean Temperature Rise, 106 Climatic Change 141–77 (2011); Hare, W. W. *et al.*, Climate Hotspots: Key Vulnerable Regions, Climate Change and Limits to Warming, 11 Regional Environmental Change 1, 1–13 (2011); Frieler, K. M. *et al.*, Limiting Global Warming to 2°C is Unlikely to Save Most Coral Reefs, Nature Climate Change, Published Online (2013) doi: 10.1038/NCLIMATE1674; M. Schaeffer *et al.*, Adequacy and Feasibility of the 1.5°C Long-Term Global Limit, Climate Analytics (2013).

[74] Anderson, K. and A. Bows, Beyond 'Dangerous' Climate Change: Emission Scenarios for a New World, 369 Philosophical Transactions, Series A, Mathematical, Physical, and Engineering Sciences 20, 20–44 (2011).

[75] Cimons, M., Keep It In the Ground 6 (Sierra Club *et al.*, Jan. 25, 2016).

[76] IPCC, 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change; Summary for Policymakers at 27; IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change at 64 & Table 2.2 [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)] at 63-64 & Table 2.2 ("IPCC AR5 Synthesis Report").

[77] From 2012-2014, 107 GtCO2 was emitted (*see* Annual Global Carbon Emissions at http://co2now.org/Current-CO2/CO2-Now/global-carbon-emissions.html).

80% probability of staying below the 2°C target, the budget from 2000 is 890 $GtCO_2$, with less than 430 $GtCO_2$ remaining.[78]

To have even a 50% probability of achieving the Paris Agreement goal of limiting warming to 1.5°C above pre-industrial levels equates to a carbon budget of 550-600 $GtCO_2$ from 2011 onward,[79] of which more than 100 $GtCO_2$ has already been emitted. To achieve a 66% probability of limiting warming to 1.5°C requires adherence to a more stringent carbon budget of only 400 $GtCO_2$ from 2011 onward,[80] of which less than 300 $GtCO_2$ remained at the start of 2015. An 80% probability budget for 1.5°C would have far less that 300 $GtCO_2$ remaining. Given that global CO_2 emissions in 2014 alone totaled 36 $GtCO_2$,[81] humanity is rapidly consuming the remaining burnable carbon budget needed to have even a 50/50 chance of meeting the 1.5°C temperature goal.[82]

Unleased federal fossil fuels represent a significant source of potential greenhouse gas emissions:

- Potential GHG emissions of federal fossil fuels (leased and unleased) if developed would release up to 492 gigatons (Gt) (one gigaton equals 1 billion tons) of carbon dioxide equivalent pollution (CO2e); representing 46 percent to 50 percent of potential emissions from all remaining U.S. fossil fuels.
- Of that amount, up to 450 Gt CO2e have not yet been leased to private industry for extraction;
- Releasing those 450 Gt CO2e (the equivalent annual pollution of more than 118,000 coal-fired power plants) would be greater than any proposed U.S. share of global carbon limits that would keep emissions below scientifically advised levels.

Fracking has also opened up vast reserves that otherwise would not be available, increasing the potential greenhouse gas emissions that can be released into the atmosphere. BLM must consider a ban on this dangerous practice and a ban on new leasing to prevent the worst effects of climate change.

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[78] Carbon Tracker Initiative, Unburnable Carbon – Are the world's financial markets carrying a carbon bubble? available at http://www.carbontracker.org/wp-content/uploads/2014/09/Unburnable-Carbon-Full-rev2-1.pdf; Meinshausen, M. *et al.*, Greenhouse gas emission targets for limiting global warming to 2 degrees Celsius, 458 Nature 1158, 1159 (2009).

[79] Intergovernmental Panel on Climate Change, Climate Change 2014: Synthesis Report, Summary for Policy Makers IPCC Fifth Assessment Synthesis Report, 18 (2014), available at http://ar5-syr.ipcc.ch/ipcc/ipcc/resources/pdf/IPCC_SynthesisReport.pdf.

[80] *Id.*

[81] *See* Global Carbon Emissions, http://co2now.org/Current-CO2/CO2-Now/global-carbon-emissions.html

[82] In addition to limits on the *amount* of fossil fuels that can be utilized, emissions pathways compatible with a 1.5 or 2°C target also have a significant temporal element. Leading studies make clear that to reach a reasonable likelihood of stopping warming at 1.5° or even 2°C, global CO2 emissions must be phased out by mid-century and likely as early as 2040-2045. *See, e.g.* Joeri Rogelj *et al.*, Energy system transformations for limiting end-of-century warming to below 1.5°C, 5 Nature Climate Change 519, 522 (2015). United States focused studies indicate that we must phase out fossil fuel CO2 emissions even earlier—between 2025 and 2040—for a reasonable chance of staying below 2°C. *See, e.g.* Climate Action Tracker, http://climateactiontracker.org/countries/usa. Issuing new legal entitlements to explore for and extract federal fossil fuels for decades to come is wholly incompatible with such a transition.

Contrary to BLM's frequent assertion, leasing is not merely a "paper transaction," but rather an action that conveys concrete property rights to explore for, extract, and market oil and gas. The readily foreseeable development of the proposed leases will cause, directly and indirectly, greenhouse gas emissions that could amount to millions of metric tons of carbon dioxide equivalent.

NEPA requires BLM to inform the public of the "significance" of these emissions, 40 C.F.R. § 1502.16(a)-(b); for example, BLM must "evaluate the[ir] severity." *Robertson*, 490 U.S. at 352 . To serve NEPA's "twin aims" of informing agency decisionmakers and the public, this evaluation must be in terms that will meaningfully inform these intended audiences of the magnitude and consequences of these effects. *Natural Res. Def. Council v. Nuclear Regulatory Comm'n*, 685 F.2d 459, 487 n.149 (D.C. Cir. 1982) *rev'd on other grounds sub nom. Balt. Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 106-107 (1983); *Columbia Basin Land Prot. Ass'n v. Schlesinger*, 643 F.2d 585, 594 (9th Cir. 1981).

Based on BLM's own analysis, the proposed lease sale would make available for extraction and combustion the equivalent of approximately 16,330,437 metric tons CO_2.[83] Despite the availability of this BLM data, the EA makes no effort whatsoever to calculate the full climate impacts of leasing[84] – impacts that must include not just on-site emissions from development, but the full life-cycle emissions of processing, transporting, and ultimately burning the oil. BLM argues that it will conduct this analysis at a later stage: "Further NEPA analysis would be conducted at the APD stage, when specific development details with which to analyze potential GHG emissions are likely to be known."[85] Because, however, the lease sale is the final decision-making point at which BLM can avoid irretrievably conveying a right to extract oil and gas, it is impermissible to postpone consideration of emissions impacts to a future permitting stage – a stage at which BLM will have already surrendered the decision whether or not to allow extraction in the first instance. Instead, BLM must consider and quantify now, prior to lease issuance, the full GHG impacts of irretrievable commitment to lease issuance, including cumulative impacts from BLM's leasing program across the planning area, the region, and the nation.

BLM argues that "Since climate change and global warming are global phenomena, for purposes of this NEPA analysis, the analysis presented above about the direct and indirect effects of GHG emissions from the proposed actions is also an analysis of the cumulative effects of the proposed actions. Consistent with PIM 2017-003, the BLM has determined that this analysis "adequately addresses the cumulative impacts for climate change from the proposed action and its alternatives, and therefore a separate cumulative effects analysis for GHG emissions is not needed."[86] This reasoning is directly contrary to NEPA's scientific integrity requirements. It is demonstrated beyond any doubt that emissions from federal oil and gas production contribute a substantial amount to global emissions and to direct, indirect, and cumulative climate change

[83] EA at 29 ("Using an RFD of two wells for the lease sale and an EPA emissions factor of 0.43 Metric tons of CO2 per Barrel, [EPA, 2016a] indirect GHG emissions can be estimated at 1,814,493 metric tons per parcel.")
[84] *See* EA at 29-30.
[85] EA at 30.
[86] EA at 36.

impacts,[87] and that unleased federal oil and gas reserves are sufficient to exhaust the remaining carbon budget.[88]

Relying on NEPA regulations and case law, the Council on Environmental Quality has explicitly explained that dismissing emissions as globally insignificant is not an appropriate basis for consideration of climate change impacts under NEPA:

> Therefore, a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA. Moreover, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change challenge itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact. When considering GHG emissions and their significance, agencies should use appropriate tools and methodologies for quantifying GHG emissions and comparing GHG quantities across alternative scenarios. Agencies should not limit themselves to calculating a proposed action's emissions as a percentage of sector, nationwide, or global emissions in deciding whether or to what extent to consider climate change impacts under NEPA.[89]

Although the specific 2016 CEQ guidance has been "withdrawn for further consideration," 82 Fed. Reg. 16,576 (April 5, 2017), the underlying requirement to consider climate change impacts under NEPA, including indirect and cumulative combustion impacts foreseeably resulting from fossil fuels leasing decisions, has not changed. *See S. Fork Band Council Of W. Shoshone Of Nevada v. U.S. Dep't of Interior*, 588 F.3d 718, 725 (9th Cir. 2009); *Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1214-15 (9th Cir. 2008); *Mid States Coalition for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 550 (8th Cir. 2003); *WildEarth Guardians v. United States Office of Surface Mining, Reclamation & Enf't*, 104 F. Supp. 3d 1208, 1230 (D. Colo. 2015); *Dine Citizens Against Ruining Our Env't v. United States Office of Surface Mining Reclamation & Enf't*, 82 F. Supp. 3d 1201 (D. Colo. 2015); *High Country Conservation Advocates v. United States Forest Serv.*, 52 F. Supp. 3d 1174 (D. Colo. 2014).

Consideration of NEPA principles and practices in the analysis of GHG emissions and climate change requires: (1) that agencies quantify a proposed action's projected direct and indirect GHG emissions, taking into account available data and GHG quantification tools; (2) that agencies use projected GHG emissions as a proxy for assessing potential climate change effects when preparing a NEPA analysis; (3) where GHG emission tools, methodologies, or data

[87] Stratus Consulting, Greenhouse Gas Emissions From Fossil Energy Extracted From Federal Lands and Waters: An Update (2014), perma.cc/59G3-Z3BX.
[88] *See* Mulvaney 2015 at 4
[89] Council on Environmental Quality, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews 10-11 (Aug. 1, 2016).

inputs are not reasonably available, that agencies include a qualitative analysis in the NEPA document and explain the basis for determining that quantification is not reasonably available; (4) that agencies analyze foreseeable direct, indirect, and cumulative GHG emissions and climate effects; (5) that agencies consider reasonable alternatives and the short- and long-term effect and benefits in the alternatives and mitigation analysis; (6) that agencies consider alternatives that would make the actions and affected communities more resilient to the effects of a changing climate; and (7) that agencies assess the broad-scale effects of GHG emissions and climate change, either to inform programmatic decisions, or at both the programmatic and project-level.[90]

According to the IPCC, as of 2011, the remaining carbon budget of cumulative CO_2 emissions from all anthropogenic sources must remain below 1,000 $GtCO_2$ to provide a 66% probability of limiting warming to 2°C above pre-industrial levels.[91] For years 2012-2014, approximately 107 $GtCO_2$ was emitted, averaging approximately 36 $GtCO_2$ per year, which left us at the start of 2016 with a carbon budget of only 850 $GtCO_2$.[92] These emissions were the highest in human history and 60% higher than in 1990 (the Kyoto Protocol reference year). Of course, the Paris Agreement aim of limiting global warming to 1.5°C requires adherence to a more stringent carbon budget of only 400 $GtCO_2$ from 2011 onward, of which about 250 $GtCO_2$ remained at the start of 2016.[93] "With global annual emissions amounting to 36 $GtCO_2$ in 2015, scientists predict that at current rates global emissions will exceed the carbon budgets necessary to stay under the 1.5°C target by 2021 and the 2°C target by 2036.[94]

The potential carbon emissions from *existing* fossil fuel reserves—the known belowground stock of extractable fossil fuels—considerably exceed both 2°C and 1.5°C of warming. "Estimated total fossil carbon reserves exceed this remaining [carbon budget] by a factor of 4 to 7."[95] "For the 2°C or 1.5°C limits, respectively 68% or 85% of reserves must remain in the ground."[96] The reserves in currently operating oil and gas field alone, even with no coal, would take the world beyond 1.5°C.[97]

In order for the world to stay within a carbon budget consistent with Paris Agreement goals—"holding the increase in the global average temperature to well below 2°C above pre-

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[90] Council on Environmental Quality 2016 at 4-6.
[91] IPCC AR5 Synthesis Report at 63-64 & Table 2.2. For an 80% probability of staying below 2°C, the budget from 2000 is 890 $GtCO_2$, with less than 430 $GtCO_2$ remaining. Malte Meinshausen *et al., Greenhouse-gas emission targets for limiting global warming to 2°C*, Nature (2009) at 1159.
[92] *See* Annual Global Carbon Emissions, available at: https://www.co2.earth/global-co2-emissions; *see also* C. Le Quéré, *et al., Global Carbon Budget 2015*, Earth Syst. Sci. Data (Dec. 2015).
[93] Dustin Mulvaney, *et al., Over-Leased: How Production Horizons of Already Leased Federal Fossil Fuels Outlast Global Carbon Budgets*, EcoShift Consulting (July 2016) at 2 (Mulvaney et al. 2016) (attached as Exh. F) (citing Joeri Rogelj, *et al., Difference between carbon budget estimates unraveled*, Nature Climate Change (2016).
[94] Mulvaney at 2 (citing Oak Ridge National Laboratories, Carbon Dioxide Information Analysis Center (2015), available at: http://cdiac.ornl.gov/GCP/).
[95] IPCC AR5 Synthesis Report at 63.
[96] Oil Change International 2016 at 6; *see also* Kevin Anderson and Alice Bows, *Reframing the climate change challenge in light of post-2000 emission trends*, Phil. Trans. R. Soc. (2008) ("to provide a 93% mid-value probability of not exceeding 2°C, the concentration (of atmospheric greenhouse gases) would need to be stabilized at or below 350 parts per million carbon dioxide equivalent (ppm CO_2e)" compared to the current level of ~485 ppm CO_2e.).
[97] Oil Change International 2016 at 5, 17.

industrial levels and pursuing efforts to limit the temperature increase to 1.5°C"[98]—significant fossil fuel resources must remain in the ground. More specifically, to meet the target of 2°C, globally "a third of oil reserves, half of gas reserves and over 80 percent of current coal reserves should remain unused from 2010-2050."[99] Studies estimate that global coal, oil and gas resources considered currently economically recoverable contain potential greenhouse gas emissions of 4,196 $GtCO_2$,[100] with other estimates as high as 7,120 $GtCO_2$.[101]

Critically, the United States carbon quota—equivalent to 11% of the global carbon budget needed for a 50% chance of limiting warming to 2°C—allocates approximately 158 $GtCO_2$ to the United States as of 2011.[102] By way of comparison, federal and non-federal fossil fuel emissions together would produce between 697 and 1,070 $GtCO_2$.[103] Regarding just federal fossil fuel resources, the United States contains enough recoverable coal, oil and gas that, if extracted and burned, would result in as much as 492 $GtCO_2$, far surpassing the entire global carbon budget for a 1.5°C target and nearly eclipsing the 2°C target—to say nothing of the United States 'share' of global emissions.[104] Unleased federal fossil fuels comprise 91% of these potential emissions, with already leased federal fossil fuels accounting for as much as 43 $GtCO_2$.[105]

In 2012, "the GHG emissions resulting from the extraction of fossil fuels from federal lands by private leaseholders totaled approximately 1,344 $MMTCO_2e$."[106] Between 2003 and 2014, approximately 25% of all United States and 3-4% of global fossil fuel greenhouse gas emissions are attributable to federal minerals leased and developed by the Department of the Interior.[107] Continued leasing and development of federal fossil fuel resources commits the world to 'extremely dangerous' warming well beyond the 2°C threshold. As one study put it, "the disparity between what resources and reserves exist and what can be emitted while avoiding a temperature rise greater than the agreed 2°C limit is therefore stark."[108] In short, *any* new leasing of federal fossil fuel resources is inconsistent with a carbon budget that would seek to avoid catastrophic climate change.

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[98] Paris Agreement at Art. 2.
[99] Christophe McGlade & Paul Ekins, *The geographical distribution of fossil fuels unused when limiting global warming to 2°C*, Nature (Jan 2015).
[100] Raupach 2014.
[101] IPCC AR5, Mitigation of Climate Change, Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (2014) at Table 7.2.
[102] Raupach at 875.
[103] Mulvaney 2015 at 16.
[104] *Id.*
[105] *Id.*
[106] Stratus 2014 at 9.
[107] *See* Energy Information Administration, *Sales of Fossil Fuels Produced from Federal and Indian Lands, FY 2003 through FY 2014* (July 2015); *see also* Stratus 2014.
[108] McGlade & Ekins at 188.

IV. Conclusion

Oil and gas leasing is an irrevocable commitment to convey rights to use of federal land – a commitment with readily predictable environmental consequences that BLM is required to address. These include the specific geological formations, surface and ground water resources, seismic potential, or human, animal, and plant health and safety concerns present in the area to be leased. Unconventional oil and gas development not only fuel the climate crisis but entail significant public health risks and harms to the environment.

For the reasons set forth above, the proposed September 2017 Fillmore, Utah lease sale poses particularly significant environmental risks, including to the Sheeprocks greater sage-grouse population. Without adequate consideration of new information never considered in either the 1987 RMP or the 2015 grouse amendments, regarding both the Sheeprocks grouse population and oil and gas effects on big game and climate change, BLM cannot legally offer the proposed parcels for lease.

Sincerely,

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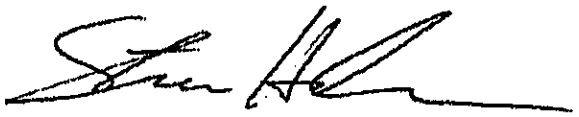

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